9.0 AIR QUALITY

This section examines the existing air quality environment and potential impacts to air quality that may occur as a result of the adoption of the Dry Creek Greenway Regional Vision for the County of Placer jurisdiction. Federal, state, and local regulations and standards are discussed and emissions from project construction and future use are discussed. Mitigation measures are recommended where necessary and feasible to reduce impacts to a less than significant level. The Greenway Vision is a policy level document, and future projects, once identified, will require additional environmental review at the project level.

9.1 Environmental Setting

The proposed project area is located in western Placer County and lies within the urbanized area of Sacramento within the Sacramento Valley Air Basin (SVAB). The project area is subject to federal, state, and local air quality regulations. The SVAB is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Range. Eleven counties are included in the SVAB, including all or portions of Shasta, Tehama, Glenn, Colusa, Yolo, Solano, Butte, Sutter, Yuba, Placer, and Sacramento counties. Within the SVAB, the Dry Creek Greenway Regional Vision project area is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). The PCAPCD is responsible for implementing emissions standards and other requirements of federal and state laws. Air quality concerns within the Sacramento Valley include the most common pollutants including ozone, carbon monoxide, nitrogen oxides, sulfur oxides, and particulate matter from dust and diesel exhaust.

This Environmental Setting section will describe the climatology of the region and its impact on air quality, air contaminants of concern and their health effects, and area specific contaminant levels.

The Sacramento Metropolitan Air Quality Management District's (SMAQMD) Guide to Air Quality Assessment (2004) provides the background for the following discussion on climate and air contaminants.

9.1.1 Climate

The project site is located in western Placer County which lies within the SVAB. The basin is bounded by the North Coast Ranges on the west and the Northern Sierra Nevada Mountains on the east. The Mediterranean climate of the Sacramento Valley has summers that are hot and dry with temperatures usually in the 90s while winters are mild and rainy with occasional temperatures below freezing. The prevailing winds are moderate and vary from moist clean breezes from the south to drier winds from the north.

The Sacramento Valley's topography and climate affect air quality. The surrounding mountains create a barrier to airflow with a resulting entrapment of air pollutants within the Valley. Air stagnation occurs most commonly in autumn and early winter when large high-pressure cells lie over the Valley. The reduced surface winds during these months allow for air pollutants to become concentrated. The concentration of pollutants is highest when these conditions are

combined with smoke or when temperature inversions trap cool air and pollutants near the ground. The months of May through October are considered the "ozone season" and are characterized by stagnant morning air with a delta sea breeze arriving in the afternoon (SMAQMD 2004).

9.1.2 Air Contaminants

Ozone (O_3) , carbon monoxide (CO), and particulate matter (PM_{10}) are pollutants of particular concern and importance within the region. These are the three pollutants for which the Sacramento and western Placer County region still periodically exceed state and national standards.

Ozone

Ground level ozone is not emitted directly into the air, but is formed instead by chemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG) in the presence of sunlight. The major sources of NO_x and ROG are emissions from motor vehicle exhaust, gasoline vapors, chemical solvents, industrial facilities and electric utilities. In the Sacramento Valley region, over 70 percent of NO_x produced is from motor vehicles.

Ozone is a public health concern because it acts as a respiratory irritant and increases susceptibility to respiratory infections and diseases. It can also harm lung tissue at high concentrations. Ozone can cause damage to leaf tissues of crops and vegetation.

Particulate Matter

 PM_{10} consists of particulate matter that is 10 microns or less in diameter. A micron is one-millionth of a meter. Airborne dust contains PM_{10} and can include a wide range of solid or liquid particles, including smoke, dust, and aerosols. The health effects of PM_{10} exposure depends upon the specific composition of the particulate matter. Effects may include aggravated asthma, chronic bronchitis, and decreased lung function (American Lung Association 2004). A sub-set of PM_{10} is $PM_{2.5}$ which includes particles less than 2.5 microns in diameter.

Carbon Monoxide

Carbon monoxide is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Emissions from motor vehicles are the primary source of CO in the region. High concentrations of CO can reduce the oxygen-carrying capacity of blood, causing dizziness, headaches, unconsciousness, and even death. CO binds to hemoglobin in the bloodstream more strongly than oxygen and both the cardiovascular system and the central nervous system can be affected. State and federal ambient air quality standards for CO have been set to keep CO emissions below that level which adversely affects the cardiovascular and nervous systems.

9.2 Regulatory Setting

9.2.1 Federal and State Standards

The U. S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover

what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The criteria pollutants of most concern include those listed in Table 9-1.

Table 9-1 — Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone (O3)	1-Hour		0.09 ppm
	8-Hour	0.08 ppm	0.07 ppm
Carbon Monoxide (CO)	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Particulate Matter (PM10)	Annual	50 μg/m³	$20 \mu g/m^3$
	24-Hour	150 μg/ m³	$50 \mu g/m^3$
Particulate Matter (PM2.5)	Annual	15 μg/ m ³	12 μg/ m³
	24-Hour	65 μg/ m ³	
Sulfur Dioxide (SO2)	Annual	0.03 ppm	
	24-Hour	0.14 ppm	0.04 ppm
Nitrogen Dioxide (NO2)	Annual	0.053 ppm	
	1-Hour		.25 ppm

Note: Any pollutant criteria that does not have a federal or state standard set is indicated by "--".

Source: California Air Resources Board (2006)

The federal and state governments have enacted laws mandating the identification of areas not meeting the ambient air quality standards and development of regional air quality plans to eventually attain the standards. State definitions of attainment classifications include:

- <u>Unclassified</u>: a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- Attainment: a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a three-year period.
- <u>Nonattainment</u>: a pollutant is designated nonattainment if there was at least one violation of a State standard for that pollutant in the area.
- <u>Nonattainment/Transitional</u>: is a subcategory of the nonattainment designation. An area is designated nonattainment / transitional to signify that the area is close to attaining the standard for that pollutant.

Source: California Air Resources Board (2003)

Federal definitions of attainment classifications include:

• **Nonattainment**: any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

- <u>Attainment</u>: any area that meets the national primary or secondary ambient air quality standard for the pollutant.
- <u>Unclassifiable</u>: any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

Source: Environmental Protection Agency (EPA) (2005)

Both the EPA and CARB classify Placer County as non-attainment for ozone, and CARB classifies the County as non-attainment for PM_{10} . For carbon monoxide and all other criteria pollutants, Placer County is designated as attainment or unclassified (California Air Resources Board 2005).

The EPA classified most of Placer County, including the project vicinity portion of Placer County, as "serious non-attainment" for the eight-hour federal ozone standard in April 2004. This classification requires attainment to be reached within nine years. The project site is located in a multi-county region referred to as the Sacramento Federal Ozone Nonattainment Area, and the air quality and air control districts within the area are developing a regional Ozone Attainment Plan that will become part of the State Implementation Plan (SIP). The focus of this regional plan is to reduce the emissions of ROG and NOx within the Sacramento metropolitan area with a goal of attainment by 2013. The regional air quality districts are required to submit a rate of progress plan detailing the progress in meeting the eight-hour ozone standard within two years of the designation of "serious non-attainment". The regional air quality districts adopted the Rate of Progress plan in February 2006.

9.2.2 Local (Placer County)

The PCAPCD is responsible for implementing emissions standards and other requirements of federal and state laws.

Local policies and regulations relevant to the proposed project include Placer County regulations and requirements outlined in the Placer County General Plan, the Dry Creek-West Placer Community Plan, the Granite Bay Community Plan, and the Horseshoe Bar/Penryn Community Plan. The Greenway vision and implementation recommendations were planned specifically to identify and emphasize common shared values as expressed in existing goals and policies of regional jurisdictions. As such, the Vision components are designed to be consistent with the goals and policies of Placer County and unincorporated community plan areas. When future projects are proposed for implementation, they would be individually evaluated for consistency with General Plan and community plans' goals and policies. Although the cities of Roseville and Rocklin and the Town of Loomis are not adopting the Greenway Vision, those communities outside of the proposed project area have adopted many similar goals and policies.

The policies listed below were excerpted from a review of the Placer County General Plan, Dry Creek-West Placer Community Plan, Granite Bay Community Plan, and Horseshoe Bar/Penryn Community Plan. Because many of the air quality policies found in the community plans are similar to those contained in the county-wide Placer County General Plan, only the General Plan policies are noted.

Placer County General Plan

Air Quality - General

Policy:

6.F.6. The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts.

Air Quality - Transportation/Circulation

Policy:

6.G.3. The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

9.3 Environmental Impacts

This section identifies and discusses potential air quality impacts related to the construction and operation of the Greenway. Air quality impacts associated with implementation of the project would primarily result from construction activities associated with development of the Greenway trail segments. Program level review can identify standard mitigation requirements that are routinely utilized to ensure impacts to air quality are reduced.

9.3.1 Criteria for Significance

The CEQA Guidelines have established criteria for determining the significance of project generated impacts to air quality. Project impacts would be considered significant if they would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which
 the project region is non-attainment under an applicable federal or state ambient air
 quality standard (including releasing emissions which exceed quantitative thresholds
 for ozone precursors).
- Create objectionable odors affecting a substantial number of people.

In addition, the Placer County Air Quality Control District has established significance thresholds of 82 pounds per day for ROG, NO_x, and PM₁₀ and a CO threshold of 550 pounds per day.

9.3.2 Impacts to Air Quality

Impact 9-1: Construction related emissions of ROG, NO_x, and PM₁₀

may exceed significance thresholds on a temporary basis

during construction.

Significance: Potentially Significant

Mitigation Measures: Mitigation Measure 9-1a, Conduct project specific air

quality analysis for each project or phase implemented as part of the Greenway; and Mitigation Measure 9-1b, Prepare and implement a construction emission/fugitive

dust control plan with approval by PCAPCD.

Significance after Mitigation: Less than Significant

Construction activities associated with the development of the project would generate an increase in criteria pollutants and particulate matter from grading, trenching, and earthmoving activities (i.e. dust generation). Diesel fumes associated with the operation of construction equipment would contribute to the release of NO_x and ROGs. Asphalt paving of the pedestrian/bike trails proposed to be paved would create ROG emissions.

It is expected that only portions of the Greenway trails would be constructed at any one time due to funding availability. The total length of proposed paved trails within all project areas is approximately nine (9) miles. This includes approximately five (5) miles of previously planned Class I trails within the project area corridors and another four (4) miles of new paved trails recommended by the Greenway Vision within the project areas. It is likely that construction would occur in smaller segments. Trail construction projects may be limited in size and therefore may not exceed PCAPCD significance thresholds.

Conducting a project specific analysis of each future Greenway project will identify emission levels based upon the specific project design and construction methods required for project construction. Some projects may require trail construction only while others may include node features such as parking and plumbed restrooms. There are a variety of construction related air quality mitigation measures utilized by PCAPCD that could apply to the potential corridor, trail, and node projects envisioned by the Greenway Vision. These are generally targeted to control fugitive dust emissions and to reduce construction exhaust emissions, and include but are not limited to:

- Reducing fugitive dust emissions from soils exposed or stored during construction by covering or watering.
- Reducing construction equipment exhaust emissions by maintaining equipment in good running condition and/or by utilizing a construction fleet mix that will minimize NOx and ROG emissions.

By implementing Mitigation Measures 9-1a and 9-1b, impacts to air quality from construction related emissions will be reduced to less than significant.

Impact 9-2: Construction of the project would result in objectionable

odors.

Significance: Less than Significant

Mitigation Measures: None Required

Construction of individual projects under the Greenway Vision could result in the generation of odors from diesel powered equipment and from paving of trails within the Greenway. However, due to the relatively small physical size of expected future construction projects and the limited number of equipment that would likely be utilized, the odors generated would be temporary and would not be expected to be substantial. The impacts would be less than significant.

Impact 9-3: Operation of Greenway projects after construction would

create emissions of ROG, NO_x, and PM₁₀ that may exceed

significance thresholds.

Significance: Less than Significant

Mitigation Measures: None Required

The use of trails would primarily be utilized for walking, running, bicycling, and horseback riding. These modes of transportation and recreation are essentially non-polluting for criteria pollutants. There would be some traffic related increases as people would drive to available nodes and parks to utilize the Greenway trails and corridors. However, this additional traffic would be expected to be minimal. The available network of trails and bicycle lanes within the County would allow some users to reach Greenway trails without using polluting modes of transportation to reach the Greenway facilities. Also, as Greenway trails are added to the existing and planned trail network, more area residents would likely utilize the trails for alternative commuting, thus reducing trips by automobile. The impacts to air quality created by use of the Greenway facilities would be less than significant.

Impact 9-4: Consistency with air quality plans

Significance: Less than Significant

Mitigation Measures: None Required

Due to the non-attainment status of western Placer County and the Sacramento region for ozone, both air quality planning and transportation planning within the region include an emphasis on alternative modes of transportation that could reduce emissions of criteria pollutants, especially the precursors of ozone, NO_x and ROG. Bicycle commuting is encouraged in these plans in an effort to reduce vehicle trips, vehicle miles driven, and vehicle idling. The implementation of the Greenway Vision project will not conflict with air quality planning and therefore the impact is less than significant.

9.4 Mitigation Measures

Mitigation Measure 9-1a: Conduct project specific air quality analysis for each project or phase implemented as part of the Greenway. Mitigation Measure 9-1a applies to Impact 9-1.

Mitigation Measure 9-1b: Prepare and implement a construction emission/fugitive dust control plan with approval by PCAPCD. Mitigation Measure 9-1b applies to Impact 9-1.

The County shall prepare a construction emission/fugitive dust control plan in consultation with the PCAPCD. This plan shall be approved by the PCAPCD prior to ground breaking on any Greenway project and contractors shall implement the plan during construction of all Greenway projects. The control plan shall include the following requirements, if applicable:

- a) Construction equipment exhaust emissions shall not exceed PCAPCD Rule 202 Visible Emission limitations.
- b) Minimize idling time to 5 minutes for all diesel powered equipment.
- c) Keep construction equipment properly maintained in accordance with manufacturers' specifications.
- d) The prime contractor shall submit to the District a comprehensive inventory (i.e. make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project. The project representative shall provide the District with the anticipated construction timeline including start date, and name and phone number of the project manager and on site foreman. The project shall provide a plan for approval by the District demonstrating that the heavy-duty (> 50 horsepower) offroad vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average. The District should be contacted for average fleet emission data. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, aftertreatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure: (http://www.airquality.org/ceqa/Construction_Mitigation_Calculator.xls).
- e) Use California Air Resources Board (CARB) diesel fuel for all diesel-powered equipment.
- f) Fugitive dust is to be controlled per District Rule 228, Fugitive Dust.
- g) No trucks will transport excavated material off-site unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments, and loads are either:
 - a. Covered with tarps;
 - b. Wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
- h) Storage piles and disturbed areas not subject to vehicular traffic will be stabilized by being kept wet, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.

- i) Suspend all grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour and dust is impacting adjacent properties.
- j) Construction vehicles leaving the site will be cleaned to prevent dust, silt, mud, and dirt, from being released or tracked offsite.
- k) There shall be no open burning of removed vegetation during construction. Vegetative material should be chipped or delivered to waste facilities.

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